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| 09/878,491 | 06/11/2001 | Kazuo Maeda | VREX-0022USAAON00 | 2088 |

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04/11/2003

EXAMINER

CHANG, AUDREY Y

| ART UNIT | PAPER NUMBER |
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2872

DATE MAILED: 04/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/878,491

Applicant(s)

MAEDA ET AL.

Examiner

Audrey Y. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Remark

- This Office Action is in response applicant's amendment filed on February 3, 2003, which has been entered as paper number 7.
- By this amendment, the applicant has canceled claims 1-3 and has newly added claims 4-17.
- Claims 4-17 remain pending in this application.
- The *objections* to the *drawings* set forth in the previous Office Action dated August 28, 2002 **still hold**.
- The rejections to the claims under 35 USC 112, first and second paragraphs, set forth in the previous Office Action are *withdrawn* in response to applicant's amendment.

Response to Amendment

- The amendment filed on February 3, 2003 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the newly added claims 4-17 recite a method for manufacturing a "3D polarizer". The specification does not give a support for the polarizer to be "3D".

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

- The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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- **Claims 4-17 are rejected under 35 U.S.C. 112, first paragraph**, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The reasons for rejection based on the newly added matters are set forth in the paragraph above.

- **Claims 4-17 are rejected under 35 U.S.C. 112, first paragraph**, as containing subject matter which was not described in the specification in such a way as to *enable* one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification fails to teach what is considered to be a “3D polarizer” and how could a polarizer be “3D”. A polarizer can filter or select certain polarization state of the incident light but it *cannot* create any three dimensional effect.

The specification also fails to teach how could the laminated polarizing film be a *polarizing* film by simply having PVA film and TAC or CAB film. It is understood in the art that none of these films will naturally have any polarization property. Essential steps forming the PVA film to have polarization effect are missing.

The specification also fails to teach how could the laminated polarizing film is a **half wave plate**, as stated in claim 13. The applicant is respectfully reminded that a polarizer is **not** a wave plate, (please check standard optic textbook). *The specification fails to teach how could a polarizing film become a half wave plate.* A polarizer as understand in the art has the function to *select* out a single polarization state of the incident light. A half wave plate, which is a *retarder*, has the effect of *rotating* a polarization state of a *polarized* light. The two elements are different optical elements and have *different optical functions*. Furthermore, the applicant fails to teach how could a half wave plate capable of being used with a 3D display to create 3D viewing. The retarder has to be patterned and be working together with a polarizer,

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(as shown in Figure 9 of cited Faris reference (PN. 5,327,285)) in order to provided micro-polarizer pattern to allow selectively displaying left eye and right eye image respectfully to create stereoscopic viewing.

The specification also does not teach how could the polarizing film “not being birefringent” is capable of providing retardation phase difference (i.e. as a wave plate) to the light.

The specification also fails to teach how could a phase shift of 180 degree be achieved in the *polarizer*, as claimed in claim 16. The phase shift is a result of retarder not a result of polarizer.

Polarization is referred to the *vibration* of the electric field of the light; it cannot give any phase shift.

The applicant is confused with the idea of polarization and wave plate retardation.

Clarifications are required.

- The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- **Claims 4-17 are rejected under 35 U.S.C. 112, second paragraph**, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase “3D polarizer” recited in claim 4 is confusing and indefinite since it is not clear what is considered to be the “3D” function here.

The phrase “said protected assembly” recited in claim 6 is indefinite and confusing since it lacks proper antecedent basis from its based claim.

The phrases “a support”, “a laminated polarizing film”, and “an adhesive agent” that are recited in claim 14 are confusing and indefinite since it is not clear how do they each relate to the transparent support, the lamination of a polarizing film, and the adhesive agent, recited in its base claim (claim 4).

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The phrase "left unfilled" recited in claim 8 is confusing and indefinite since it is not clear it is left unfilled with what.

Claim 13 is dependent from "claim 13" which is itself, this therefore makes the scope of the claim unclear.

The phrase "right-eye image display parts" and the phrase "left-eye image display parts" recited in the claims are confusing since it is not clear if they are referred to the images themselves or not. If not what is considered to be "image display part".

The phrase "palatalizing film" recited in claim 17 is confusing and in error since it is not clear what is this film.

The claims are generally narrative and indefinite, failing to conform to current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. The applicant is respectfully reminded to clear out ALL of the discrepancies of the claims to make the claims in comply with the requirements of 35 USC 112, first and second paragraphs.

Claim Rejections - 35 USC § 103

- The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- **Claims 4-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Faris (PN. 5,327,285) in view of the patent issued to Okamoto (PN. 6,147,738).**

Faris teaches a *micropolarizer* (Figure 1), which can be used with spatially multiplexed image elements in a 3D stereo display system, (please see column 1). The stereoscopic viewing is enabled by

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having the *micropolarizer* (1, Figure 1) with mixed regions of *orthogonal polarization states* (P1 and P2) that are aligned with the spatially multiplexed left and right eye image respectively such that the right eye and left eye image are then coded with orthogonal polarization states (P1 and P2), (the micropolarizer therefore serves as the left eye and right eye image *display parts*), respectively, and then with the help of a spectacle the left and right eye images could be viewed by left and right eye respectively of an observer. Faris teaches that the *micropolarizer is manufactured by laminating a PVA film* (5, 10 or 68, in Figures 2-3 and 6a), which could be a *linear polarizer, with a CAB or TAC film* (4 or 69) that together serve as the *laminated polarizing film*. Faris also teaches that the specific portions of the laminated polarizing film may be cut away by using a *diamond cutter* (66, Figure 6a) so that a plurality of grooves extending from a first side of the polarizing film with respect to the second side are formed, (please see Figure 6a and column 4, lines 24-30). The plurality of grooves are then corresponding to patterned regions of linear polarizer.

This reference has met all the limitations of the claims. Faris teaches that the micropolarizer could be used with spatially multiplexed image element to create stereoscopic display wherein the spatially multiplexed image element may serve as the *transparent support member* however it does not teach explicitly to include protective layer (as in claim 14) and an adhesive layer. *Okamoto* in the same field of endeavor teaches a polarizer (18 in Figure 1) used with a liquid crystal display device wherein the polarizer layer (19, Figure 3) is interposed between a pair of TAC film (20 and 21) and is adhered via an *adhesive layer* (24) to a *transparent glass substrate* (9). The polarizer is also protected by a *protective film* (23), (please see Figures 1 and 3). It would then have been obvious to one having ordinary skill in the art to modify the micropolarizer of Faris to make it adhered to a glass substrate via an adhesive layer and to be covered with a protective layer for the benefit of easy adoption of the micropolarizer to any display device, including spatially multiplexed image element or display member for the stereoscopic

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viewing, and for the benefit of protecting it from foreign dusts so that the viewing quality may be enhanced.

With regard to claim 5, Faris teaches that the polarizing film can be a *linear polarizer*. (please see column 3, lines 29-30).

With regard to claims 8-9, Faris teaches that the specified cut-away regions are not filled with any material. Although this reference does not teach that the cut-away regions are filled with synthetic resin, since the specification fails to teach the criticality of having this filling will overcome any problem in the prior art such modification is considered to be obvious matters of design choice to one skilled in the art for the benefit of adding certain protection layer to the polarizer.

With regard to the feature concerning the drawn PVA film, Faris teaches that the PVA film is stretched to obtain polarization property. Faris teaches that the PVA film is of 10-20 micron thick but it does not teach explicitly that it is of 38 micron, (with regard to claim 12). However the specification fails to teach the criticality of having this particular thickness will overcome any problem in the prior art and the micropolarizer of Faris functions the same as the instant application, such modification is therefore considered to be obvious matters of design choice to one skilled in the art for the benefit of providing different arrangement for the film.

With regard to claim 11, Faris teaches that the TAC or CAB film is of a thickness of 125 μm , which is essentially the same as 126 μm , (please see column 2, lines 60).

With regard to claim 16, Faris in a different embodiment, teaches that the PVA film may be formed to have patterned π phase regions (37 in Figure 9) such that the patterned film form a *half wave retarder*, (please see Figure 9). This means the patterned regions (37) impart a phase difference of 180 degree to the light passes through them as compared to the light passed through the regions without the patterned film. In this case the PVA film is not a polarizer.

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With regard to claim 17, Faris teaches that the pitch of the micropolarizer may be ranged between 10^4 micron to 10 micron, which certainly includes 160 micron, (please see column 1). Faris also teaches that the micropolarizer can have checkerboard type of arrangement for regions having polarization states P1 and P2 respectively, (please see Figure 1). This suggests that the pitches for the micropolarizer in both the width and length directions may assume the values stated above.

Response to Arguments

The newly submitted claims have been fully considered and they are rejected for the reasons stated above.

The applicant is respectfully noted that a “phase difference film” is **not** a linear polarizer. The cited patent (PN. 5,327,285) incorporated as reference never teaches such. The applicant seems to be confused with the notion of “polarization” and the “phase retardation” effect. The applicant is respectfully advised to consult with standard optics textbook for such effects.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

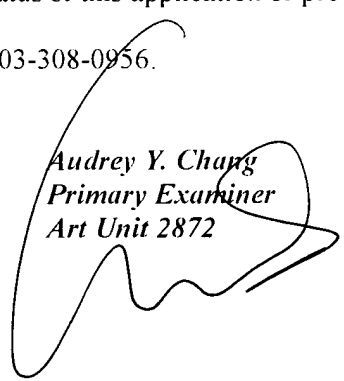
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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 703-305-6208. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on 703-308-1637. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



*Audrey Y. Chang
Primary Examiner
Art Unit 2872*

A. Chang, Ph.D.
April 9, 2003